

**WHAT IS CLAIMED IS:**

1           1.     A method comprising:  
2  
3           retrieving an intermediate node policy characterizing communication  
4 properties supported by an intermediate node, the intermediate node being between  
5 a source node and a destination node in a communication path;  
6  
7           forming a first policy-compliant message in accordance with the  
8 intermediate node policy, the first policy-compliant message including a request  
9 for a destination node policy characterizing communication properties supported  
10 by the destination node.

11  
12           2.     A method as recited in claim 1 further comprising:  
13           transmitting the first policy-compliant message to the intermediate node;  
14           receiving the destination node policy;  
15  
16           forming a second policy-compliant message in accordance with both the  
17 intermediate node policy and the destination node policy.

18  
19           3.     A method as recited in claim 1 wherein the forming operation further  
20 comprises forming a first policy-compliant message including a source node policy  
21 characterizing communication properties supported by the destination node.  
22

23  
24           4.     A method as recited in claim 1 further comprising:  
25

retrieving the destination node policy;

forming a second policy-compliant message, the second policy-compliant message including an underlying message, the second policy-compliant message conforming to the destination node policy;

forming a third policy-compliant message, the third policy-compliant message including the second policy-compliant message, the third policy-compliant message conforming to the intermediate node policy.

5. A method as recited in claim 2 further comprising determining whether the destination node policy specifies an additional intermediate node.

6. A method as recited in claim 2 further comprising:  
determining whether the destination node policy specifies an additional intermediate node;

if the destination node policy specifies an additional intermediate node  
retrieving a policy from the additional intermediate node.

7. A method as recited in claim 2 further comprising:  
determining whether the destination node policy specifies an additional intermediate node;

1 if the destination node policy specifies an additional intermediate node  
2 forming a third policy-compliant message in accordance with the intermediate  
3 node policy, the third policy-compliant message including a request for an  
4 additional intermediate node policy characterizing communication properties  
5 supported by the additional intermediate node.  
6

7 8. A method as recited in claim 1 further comprising determining  
8 whether the intermediate node policy is compatible with a source node policy  
9 characterizing communication properties supported by the source node.  
10

11  
12 9. A method as recited in claim 1 further comprising determining  
13 whether the intermediate node policy is compatible with a source node policy  
14 characterizing communication properties supported by the source node, wherein  
15 the determining operation comprises receiving a notification from a service that  
16 the intermediate node policy is compatible with the source node policy.  
17

18  
19 10. A method as recited in claim 1 wherein the retrieving operation  
20 comprises incrementally receiving the intermediate node policy.  
21  
22  
23  
24  
25

11. A method as recited in claim 1 wherein the retrieving operation  
comprises receiving the intermediate node policy from a node other than the  
intermediate node.

12. A method as recited in claim 1 wherein the retrieving operation  
comprises reading the intermediate node policy from a cache memory at the source  
node.

13. A computer program product encoding a computer program for  
executing on a computer system a computer process, the computer process  
comprising:  
retrieving an intermediate node policy and a destination node policy, the  
intermediate node policy characterizing communication properties supported by an  
intermediate node and the destination node policy characterizing communication  
properties supported by a destination node, the intermediate node being between a  
source node and the destination node in a communication path;  
applying the intermediate node policy and the destination node policy to an  
underlying message in order of the destination node policy followed by the  
intermediate node policy.

14. A computer program product as recited in claim 13 wherein the  
applying operation comprises:  
creating a first policy-compliant message including the underlying message,  
the first policy-compliant message being created according to the destination  
policy;  
creating a second policy-compliant message including the first policy-  
compliant message, the second policy-compliant message being created according  
to the intermediate policy.

1  
2 15. A computer program product as recited in claim 13 further  
3 comprising selecting a policy expression from the intermediate node policy.  
4

5 16. A computer program product as recited in claim 13 further  
6 comprising determining whether the intermediate node policy is compatible with a  
7 source node policy characterizing communication properties supported by the  
8 source node.  
9

10  
11 17. A computer program product as recited in claim 13 further  
12 comprising determining whether the destination node policy specifies an additional  
13 intermediate node in the communication path.  
14

15  
16 18. A computer program product as recited in claim 13 further  
17 comprising:  
18

19 determining whether the destination node policy specifies an additional  
20 intermediate node in the communication path;  
21

22 if the destination node policy specifies an additional intermediate node in  
23 the communication path, retrieving a policy from the additional intermediate node.  
24  
25

19. A computer program product as recited in claim 13 wherein the  
retrieving operation comprises forming a request message, the request message  
including a request for the destination node policy and conforming to the  
intermediate node policy.

20. A computer program product as recited in claim 13 wherein the  
retrieving operation comprises retrieving one or more of the intermediate node  
policy and the destination node policy from a node other than the intermediate  
node, the destination node, and the source node.

21. A computer program product as recited in claim 13 wherein the  
retrieving operation comprises requesting each of the intermediate node policy and  
the destination node policy in order of the intermediate node followed by the  
destination node.

22. A computer program product as recited in claim 13 wherein the  
retrieving operation comprises incrementally receiving at least one of the  
intermediate node policy and the destination node policy.

1           23.    A computer program product as recited in claim 13 wherein the  
2 retrieving operation comprises reading at least one of the intermediate node policy  
3 and the destination node policy from a cache memory at the source node.  
4

5           24.    A computer program product as recited in claim 13 further  
6 comprising determining whether a message from the intermediate node conforms  
7 to a source node policy characterizing communication properties supported by the  
8 source node.  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25



1 25. A system comprising:

2 a source node policy having protocol parameters related to a source node;

3 a policy retriever retrieving an intermediate node policy having protocol  
4 parameters related to an intermediate node between the source node and a  
5 destination node in a communication path;

6 a message generator generating a request message in accordance with the  
7 intermediate node policy, the request message including a request for a destination  
8 node policy having protocol parameters related to the destination node.  
9  
10

11  
12 26. A system as recited in claim 25 wherein the policy retriever  
13 compares the source node policy to the intermediate node policy to determine  
14 whether the source node policy is compatible with the intermediate node policy.  
15

16  
17 27. A system as recited in claim 25 wherein the policy retriever selects a  
18 policy expression from the intermediate node policy based on the source node  
19 policy.  
20

21  
22 28. A system as recited in claim 25, wherein the message generator  
23 further transmits a message to the intermediate node, the message including at least  
24 a portion of the source node policy.  
25

1  
2 29. A system as recited in claim 25, wherein the policy retriever  
3 determines whether the intermediate node policy or the destination node policy  
4 specifies an additional intermediate node in the communication path.  
5

6 30. A system as recited in claim 25, further comprising a policy  
7 generator generating the source node policy, wherein generating comprises  
8 generating a plurality of policy expressions and at least one relationship operator  
9 associated with the plurality of policy expressions.  
10

11  
12 31. A system as recited in claim 30, wherein the policy generator  
13 generates a usage attribute related to one of the plurality of policy expressions.  
14

15  
16 32. A system as recited in claim 25, wherein the source policy comprises  
17 one or more policy expressions specifying at least one of:

18 a security protocol;

19 a routing parameter;

20 an encryption algorithm;

21 an audit trail;

22 a privacy parameter.  
23  
24  
25

1           33.    A system as recited in claim 25, wherein the source node policy  
2 comprises:

3           a plurality of policy expressions specifying protocol parameters;  
4           one or more operators related to the plurality of policy expressions, the one  
5 or more operators specifying a relationship between the plurality of policy  
6 expressions.

7  
8           34.    A system as recited in claim 25, wherein the source node policy  
9 comprises an input policy characterizing input protocol parameters and an output  
10 policy characterizing output protocol parameters.  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

35. A system comprising:

a policy retriever retrieving a plurality of policies, each policy characterizing protocol parameters related to one of a plurality of nodes, the plurality of nodes including at least one intermediate node and a destination node;

means for applying each of the plurality of policies to a message transmitted to the destination node, such that the message conforms to each of the plurality of policies.

36. A system as recited in claim 35 wherein the means for applying comprises a message generator selecting a policy expression from each of the plurality of policies, each selected policy expression being compatible with a source policy related to a source node.